
Adding an unnatural covalent bond to proteins through proximity-enhanced bioreactivity.

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Public Summary:

Scientific Abstract:

Natural proteins often rely on the disulfide bond to covalently link side chains. Here we genetically introduce a new type of covalent bond into proteins by enabling an unnatural amino acid to react with a proximal cysteine. We demonstrate the utility of this bond for enabling irreversible binding between an affibody and its protein substrate, capturing peptide-protein interactions in mammalian cells, and improving the photon output of fluorescent proteins.

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